

Intellectual property rights

Intellectual property rights are policies that protect owner's right over their product through copyright, patents, and trademarks. Each of these rights plays an irreplaceable role in safeguarding property rights. For example, patents, a governmental grant that allows someone to protect an invention (Intellectual Property Office, 2016). In order to respect the owners and to praise their creativity, intellectual property rights are highlighted in most of the developed countries. Though there are variations in the property rights nationally, they share the same goal. What if a country lacks a desirable system to secure owner's' rights? It is likely that profound impacts would be imposed such as the economic decline and diminished reputation.

Obviously, everyone should act according to the intellectual property rights. However, considering the iGEM society, which is not as compact as a country, it is hard to determine if the system is the same as that of a country or not, since originality is always emphasized to treasure the creativity and efforts by each team. If a team established an idea, years later, another team improves it, and in the end, a company commercializes a brand new product based on that idea, how should we and the iGEM community take advantage of the intellectual property rights? As synthetic biology advances, this scenario would occur more frequently. Hoping to look into the field applications of the intellectual property rights, we would like to take our project as an example for further investigation.

This year, we were inspired by the design of the tristable switch from Brown University iGEM team in 2006 and 2007. We made some changes based on their design in order to better its function and tried to solve its existing problems. Although they did not complete their circuit construction, the idea was originally theirs. Then problem came. Though we further proposed a potential usage of the switch, we did not work on it in the laboratory actually. If somebody take it and develop it into a commercial product in the future when the mechanism is well-

understood, who would be protected by the intellectual property rights? All or simply one of them. Hence, we ventured on an investigation based on articles and interviews with experts regarding academic originality. Some sources mentioned that our team is able to patent the invention as long as nobody has previously filed a patent application. Moreover, some patents are only applicable in the scope of a specific area, depending on the country in which the invention has been filed. We therefore might be able to patent tristable switch since Brown University is located in different country. Nonetheless, the idea has long been published on their iGEM wiki page - a public domain, resulting the invention to lose its novelty.

Although the tristable switch is non-patentable, we can still patent the application of tristable switch as long as we have not uploaded or shared our application to a public domain. We however think that it is too early to do so as we have yet refined the complete designs for our application. Tristable switch has various applications, and beneficial functions and they are not just limited to biosensing. People can therefore develop tristable switch accordingly and claim rights when an appropriate application has been established.

A particular technology or product could not flourish vibrantly unless the rights of the owners could be perfectly protected. Thus, the intellectual property rights would indirectly affect the prospect of the synthetic biology.

References

What is Intellectual Property? [PDF]. (n.d.). Switzerland: World Intellectual Property Organization.